Physics

Time Remaining: 45/45 (Minutes)

Q.1 | Test 1 Motion and Force | Physics Unit Wise

The distance travelled by a body is proportional to the square of time. The body is moving with

A) Uniform Acceleration
B) Variable acceleration
C) uniform velocity
D) all of the above

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Physics

Time Remaining: 44/45 (Minutes)

Q.2 | Test 1 Motion and Force | Physics Unit Wise

Inertia of a body has direct dependence on

A) velocity
B) volume
C) mass
D) density

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Physics

Time Remaining: 44/45 (Minutes)

Q.3 | Test 1 Motion and Force | Physics Unit Wise

A man is at rest in the middle of a pond on perfectly smooth ice. He can get himself to the shore by making use of Newton's

A) first law
B) second law
C) third law
D) all the laws

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Physics

Time Remaining: 44/45 (Minutes)

Q.4 | Test 1 Motion and Force | Physics Unit Wise

Two balls projected at 30° and 60° with same initial velocities. The ratio of their maximum heights is

A) 1:2
B) 1:4
C) 1:3
D) 1: $\sqrt{2}$

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Physics

Time Remaining: 44/45 (Minutes)

Q.5 | Test 1 Motion and Force | Physics Unit Wise

A graph is drawn with force along Y-axis and time along X-axis. The area under the graph represents

A) Momentum
B) Couple
C) Moment of the force
D) Impulse of the force

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Time Remaining: 44/45 (Minutes)

Q:6 | Test 1 Motion and Force | Physics Unit Wise

At which point for a projectile its kinetic energy is completely converted into potential energy

A) at point of projection
B) at the highest point
C) point to hit the ground
D) not possible

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

● A ● B ● C ● D

Next

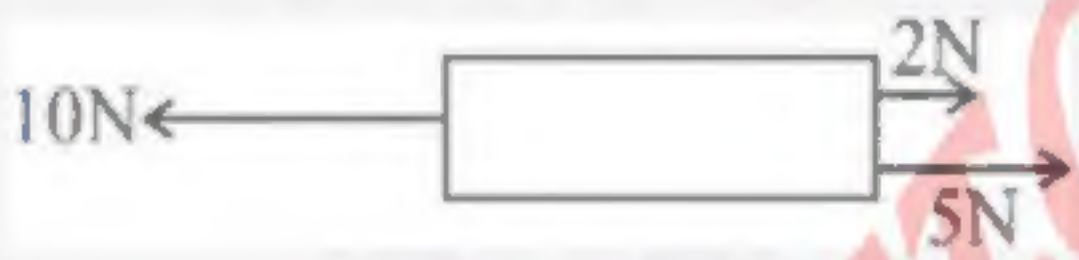
Back

Time Remaining: 44/45 (Minutes)

Q.7 | Test 1 Motion and Force | Physics Unit Wise

What is the resultant force shown in fig?

A) 7 N towards
B) 17N in arbitrary direction
C) 3N toward left
D) 10N towards left



Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Q:8 Test 1 Motion and Force Physics Unit Wise

Q. 8 A 7.0 kg bowling ball experiences a net force of 5.0 N what will be its acceleration?

A) 7.1 ms^{-2} B) 0.71 ms^{-2} C) 5.0 ms^{-2} D) 35.0 ms^{-2}

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Q:9 | Test 1 Motion and Force | Physics Unit Wise

Two projectiles are fired at different angles with the same magnitude of velocity such that they have the same range. At what angles they might have been projected?

A) 35° and 75°
B) 25° and 65°
C) 10° and 50°
D) None of the above

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Q.10 | Test 1 Motion and Force | Physics Unit Wise

A train takes 1 hour to go from one station to the other. It travels at a speed of 30 kmh^{-1} for first half hour and at a speed of 50 kmh^{-1} for the next half hour. The average speed of the train is:

A) 45 kmh^{-1}
B) 35 kmh^{-1}
C) 40 kmh^{-1}
D) 30 kmh^{-1}

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

A B C D

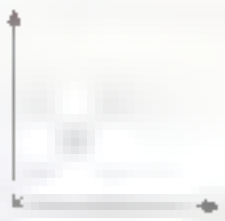
Next

Back

Time Remaining: 43/45 (Minutes)

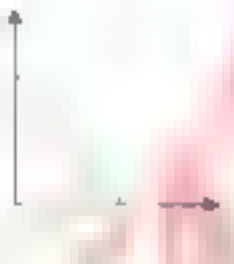
Test 1 Motion and Force — Physics Unit Wise

An object is dropped from rest. Its v-t graph is

A) 

B) 

C) 

D) 

STAR INSTITUTE LAHORE

A B C D

Next

Back

Time Remaining: 43/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

If a projectile is thrown with 19.6m/s velocity at 30° with x-axis, time taken to reach highest point?

A) 1 sec
B) 2 sec
C) 3 sec
D) 4 sec

STAR INSTITUTE LAHORE

A B C D

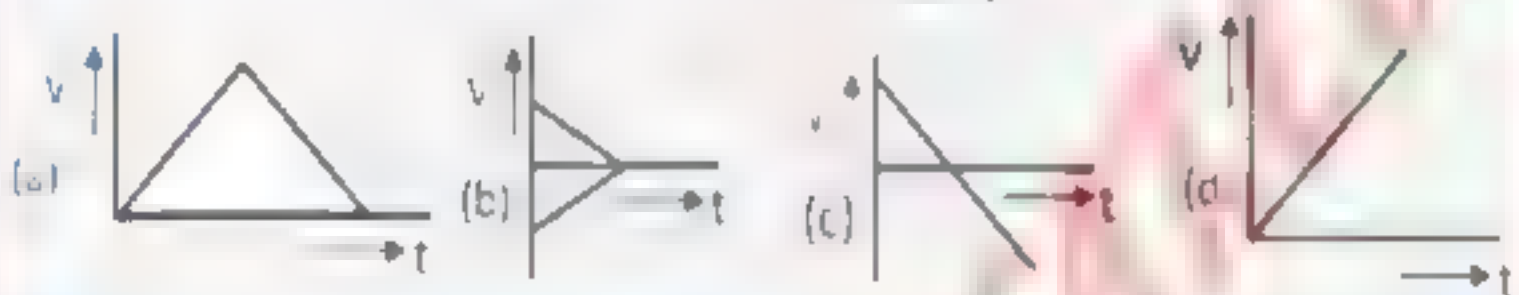
Next

Back

Time Remaining: 43/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

Displacement time graph of a ball thrown vertically upward is shown in figure then its v-t graph is



STAR INSTITUTE LAHORE

Next

Back

Physics

Time Remaining: 43/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

The distance travelled is given by

A) Area under speed-time graph
B) Slope of velocity-time graph
C) Area under distance-time graph
D) Slope of distance-time graph

Next

Back

Physics

Time Remaining: 43/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

If a body starts from a point, and returns back to the same point, then its

A. Average velocity is zero but not average speed
B Both average velocity and average speed are not zero
C Average speed is zero but not average velocity
D Both average speed and average velocity are zero

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 42/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

The variation of force acting on a body with time is shown. What is the change in momentum of body after 4s?

A) 10Ns
B) 20Ns
C) 40Ns
D) 80Ns

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 42/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

Velocity and acceleration are in the same direction when

A) Velocity of a car is increasing on a straight road
B) Velocity of a car is decreasing on a straight road
C) Car is turning round a corner
D) None of these

STAR INSTITUTE LAHORE

A B C D

Next

Back

Time Remaining: 42/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

When the average velocity of a moving body is equal to its instantaneous velocity then it is moving with

A. Uniform velocity
B. Variable velocity
C. Uniform acceleration
D. Variable acceleration

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 42/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

How far does a car travel in 6 s if its initial velocity is 2 m/s and its acceleration is 2 m/s² in the forward direction?

A) 12 m
B) 14 m
C) 24 m
D) 48 m

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 42/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

If the initial speed of a projectile is doubled.

A) Its range will double
B) Its range will be decreased by a factor of two
C) Its range will quadruple
D) Its range will decrease by a factor of four

A B C D

Next

Back

Time Remaining: 42/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

A force time graph for a linear motion is shown in figure, where the segments are circular, the linear momentum gained between zero and 8 second is

A) – 2πNs
B) 0Ns
C) 4πNs
D) – 2πNs

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 42/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

In straight line motion the

A. Acceleration is parallel (or antiparallel) to the velocity
B. Acceleration is perpendicular to the velocity
C. Acceleration is vertical, while the velocity can be in any direction
D. Acceleration is vertical and the velocity is horizontal

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 47:45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

In projectile motion the

A. Acceleration is parallel (or antiparallel) to the velocity
B. Acceleration is perpendicular to the velocity
C. Acceleration is vertical, while the velocity can be in any direction
D. Acceleration is vertical and the velocity is horizontal

STAR INSTITUTE LAHORE

A B C D

Next

Back

Time Remaining: 47:45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

A ball is in free fall. Its acceleration is:

A. Downward during both ascent and descent
B. Downward during ascent and upward during descent
C. Upward during both ascent and descent
D. Upward during ascent and downward during descent

STAR INSTITUTE LAHORE

A B C D

Next

Back

Physics

Time Remaining: 47 /45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

A baseball is thrown vertically into the air. The acceleration of the ball at its highest point is:

A) Zero
B) g, up
C) g, down
D) 2g, down

Next

Back

Time Remaining: 47:45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

A newton is the force

A) Of gravity on a 1kg body

B) That gives a 1kg body an acceleration of $1 m/s^2$

C) Of gravity on a 1g body

D) That gives a 1g body an acceleration of $1 cm/s^2$

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 47:45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

A projectile is thrown at an angle of 30° with the horizontal has a range R_1, and attains a maximum height h_1 – Another projectile thrown, with the same velocity at an angle 30° with the vertical has a range R_2 and attains a maximum height h_2. The relation between R_1 and R_2 is

A) $R_1 = \frac{R_2}{2}$

B) $R_1 = R_2$

C) $R_1 = 2R_2$

D) $R1 = 4\ R_2$

STAR INSTITUTE LAHORE

Next

Back

Time Remaining: 40/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

Time of flight of projectile is

A) $\frac{V_i Sin\theta}{g}$

B) $\frac{V_i^2 Sin\theta}{g}$

C) $\frac{2V_i Sin^2\theta}{g}$

D) $\frac{2V_i Sin\theta}{g}$

Next

Back

Time Remaining: 40/45 (Minutes)

Test 1 Motion and Force — Physics Unit Wise

Consider the following five graphs (note the axes carefully). Which of these represents motion at constant speed?

A) IV only
B) I and IV only
C) IV and V only
D) I and II only

STAR INSTITUTE LAHORE

Next

Back

Physics

Time Remaining: 40/45 (Minutes)

Q.30 | Test 1 Motion and Force | Physics Unit Wise

A racing car traveling with constant acceleration increases its speed from 10 m/s to 50 m/s over a distance of 60 m. How long does this take?

A) 2.0 s
B) 4.0 s
C) 5.0 s
D) 8.0 s

STAR INSTITUTE LAHORE

Click Here if Image Doesn't Load

Correct Answer:

A B C D

Submit Quiz

Back

Test No #01

Motion And Force

Wednesday 28-7-2021

Answer key

1 A	2 C	3 C	4 C	5 D	6 D	7 C
8 B	9 B	10 C	11 A	12 A	13 C	14 A
15 A	16 C	17 A	18 A	19 D	20 C	21 B
22 A	23 C	24 A	25 C	26 B	27 B	28 D
29 B	30 A					

Discussion

- MCQ #04

$H = \frac{u^2 \sin^2\theta}{g}$ initial velocity = Zero

So $u_y = 0$

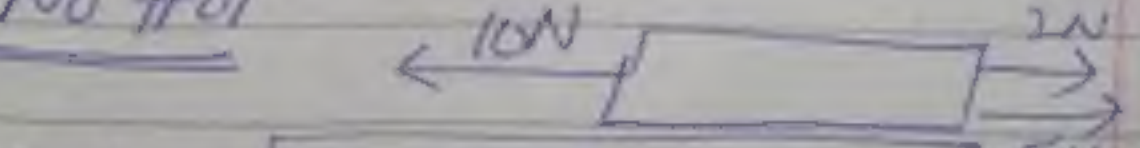
$H_1 \sin^2\theta$

$\frac{H_1}{H_2} = \frac{(\sin 30)^2}{(\sin 60)^2} = \frac{(\frac{1}{2})^2}{(\frac{\sqrt{3}}{2})^2} = \frac{\frac{1}{4}}{\frac{3}{4}} = \boxed{\frac{1}{3}}$

- MCQ #06

K.E of Projectile can never be Zero. It may be max or min.

- MCQ No #07



Resultant = 3N toward left

Sum of all the forces =

If distance same — $\frac{2v_1v_2}{v_1+v_2}$ — Shortcut No 02

MCQ # 10

time same, distance different

Shortcut $\frac{v_1+v_2}{2}$ $\frac{30+50}{2}$ = 40kmh⁻¹

MCQ NO 11 $a=g$ constant

MCQ NO 12 $\theta = 30°$

Total time = $\frac{2v_i \sin\theta}{g}$ (ہم کو صرف اوپر تک جانے کا ٹائم معلوم کرنا ہے)

اوپر تک جانا ہے — only at highest

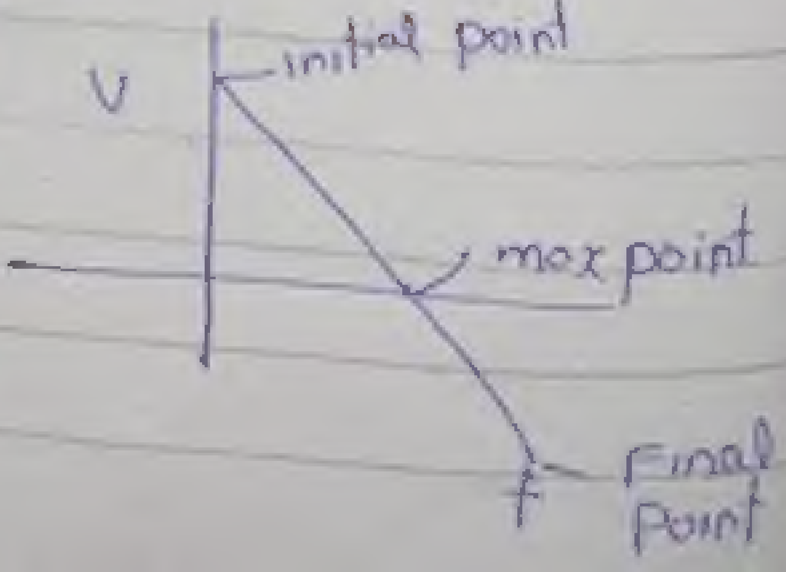
so $T = \frac{v_i \sin\theta}{g}$

$= \frac{9.8 \times \frac{1}{2}}{9.8}$ = 1 sec

MCQ # 13

$a=g$ ↑ ↓ $a=g$

اوپر جاتے ہوئے (v) زیادہ ہو گی
High Point پہ (zero) ہو گی
اور پھر جب نیچے کو آئے گی
تو velocity ↑ تیز ہو گی



MCQ #19

$S = u_i t + \frac{1}{2} a t^2$

$2 \times 6 + \frac{1}{2}(2)\, 36$

$12 + 36 = 48m$

MCQ #26

$R = \frac{u_i^2 \sin 2\theta}{g}$

MCQ #21

MCQ #23

top

velocity

u

acceleration

down word

acceleration

$a = g \downarrow$

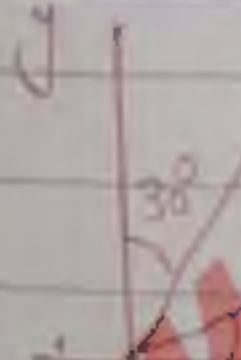
MCQ #27

Range will be equal

if $\theta_1 + \theta = 90^\circ$

جس کا Angle

x-axis سے ہے



MCQ #20

$2as = v_f^2 - v_i^2$

$a = \frac{v_f^2 - v_i^2}{2s} = \frac{2500 - 100}{2 \times 60}$

$a = 2 m/s^2$

$v_f = u + at \quad t = \frac{v_f - v_i}{a}$

$\frac{51 - 10}{20} = \frac{40}{x}$ (.25)